



Educational Topic

Astrobiologist

Related Job Titles:

Exobiologist, life scientist, space scientist

Job Description:

Astrobiologists study life in the universe: how it began, where it's located and how it has evolved or changed over time. Three main questions drive their research: How did life begin and evolve? Is there life elsewhere in the universe? What is the future for life on Earth and beyond? Astrobiologists need to understand how many different kinds of science work together. These kinds of science may include biology (microbiology, botany, physiology, zoology), chemistry, physics, geology, paleontology and astronomy. Some astrobiologists spend time writing proposals to ask for funding for their research. They usually work regular hours in laboratories and use microscopes, computers and other equipment. Some use plants and animals for experiments. Many do research outside, and many work with a team.

Interests / Abilities:

- Do you enjoy doing experiments?
- Are you interested in how animals and plants function?
- Are you curious about whether there is other life in the universe?
- Do you work well on your own?
- Do you work well with a team?
- Do you enjoy investigating mysteries or problems?

Suggested School Subjects / Courses:

- Science (biology, chemistry, physics, astronomy, planetary science with laboratory research and fieldwork)
- Math

Education / Training Needed:

The minimum education required for this position is a bachelor's degree in biology, astronomy, space science, chemistry or another appropriate subject from an accredited college or university. This course of study must include at least 20 semester hours of physical science or engineering or experience that leads to the understanding of the equipment used for manned aerospace flights. To do research, a Ph.D. is highly desired for this position.

Areas of expertise:

- *Chemical and biological evolution*: study what life is, where it's located, how it began and changed over time
- *Biogeochemistry*: study rocks for evidence of life
- *Microbiology*: study microscopic organisms and the conditions of the environments where they can survive (especially very hot/cold environments)
- *Solar system analysis*: research and design new experiments and instruments to explore the solar system
- *Paleobotany*: study fossils to understand early plant life on Earth or other planets.

Additional Resources:

- **NASA Office of Space Science**
<http://www.hq.nasa.gov/office/oss>
- **NASA Office of Life and Microgravity Sciences and Applications** <http://www.hq.nasa.gov/office/olmsa>
- **Astrobiology at NASA**
<http://astrobiology.arc.nasa.gov>
- **The Astrobiology Web**
<http://www.astrobiology.com>
- **NASA Specialized Center of Research and Training (NSCORT) / Exobiology**
<http://exobio.ucsd.edu>
- **American Institute of Biological Sciences**
<http://www.aibs.org>
- **American Physiological Society**
<http://www.faseb.org/aps>
- **Biotechnology Industry Organization**
<http://www.bio.org/welcome.html>
- **Biophysical Society**
<http://www.biophysics.org/biophys/society/biohome.htm>
- **Student Educational Employment Programs**
http://nasajobs.nasa.gov/stud_opps/employment/index.htm
- **NASA Jobs**
<http://nasajobs.nasa.gov/>
- **NASA Summer High School Apprenticeship Research Program (SHARP)**
<http://www.mtsibase.com/sharp/>

What can I do right now?

- Join a local environmental club or organization.
- Participate in Earth Day activities.
- Take summer jobs or internships at parks, farms, plant nurseries, laboratories, museums or camps.
- Visit Astro-Venture regularly to participate in chats and activities.
<http://astroventure.arc.nasa.gov>
- Call the American Association of Science and Technology Centers for information on science museums in your area that you might visit.
(202) 783-7200
- Participate in science fair projects.

- Please take a moment to evaluate this product at:
- http://ehb2.gsfc.nasa.gov/edcats/educational_topic
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- Your evaluation and suggestions are vital to continually improving NASA educational materials.
- Thank you.



<http://quest.nasa.gov/people/index.html>

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ET-2002-09-102-ARC